

**This Page Is Inserted by IFW Operations  
and is not a part of the Official Record**

## **BEST AVAILABLE IMAGES**

**Defective images within this document are accurate representations of the original documents submitted by the applicant.**

**Defects in the images may include (but are not limited to):**

- **BLACK BORDERS**
- **TEXT CUT OFF AT TOP, BOTTOM OR SIDES**
- **FADED TEXT**
- **ILLEGIBLE TEXT**
- **SKEWED/SLANTED IMAGES**
- **COLORED PHOTOS**
- **BLACK OR VERY BLACK AND WHITE DARK PHOTOS**
- **GRAY SCALE DOCUMENTS**

**IMAGES ARE BEST AVAILABLE COPY.**

**As rescanning documents *will not* correct images,  
please do not report the images to the  
Image Problem Mailbox.**

In the claims:

1. (Currently Amended) A high-speed/high-reliability Ether transmission system comprising a plurality of Ether cables, a local bus connected to an information processing device and having a higher speed than that of said Ether cables, and an I/F apparatus, said Ether cables being connected through said I/F apparatus to said local bus,

wherein said I/F apparatus comprises a plurality of Ether ports connected to said Ether cables, a bus port connected to said local bus, a controller connected to said Ether ports and said bus port, and a MAC to port table memory for storing a corresponding relationship between a MAC address to which an Ether frame is to be transferred and said Ether ports or said bus port to which said frame is to be transferred, and

wherein said controller refers to said MAC to port table memory when it receives an Ether frame having a MAC address to which said frame is to be transferred, and if said MAC address to which said frame is to be transferred is stored in said MAC to port table memory, it transmits said Ether frame to a port to which said frame is to be transferred corresponding to said MAC address, or if said MAC address to which said frame is to be transferred is, not stored, it transmits said Ether frame to ports except a port which has received said Ether frame and stores a corresponding relationship between a MAC address from which said Ether frame has been transferred and said port which has received said Ether frame in said MAC to port table memory, and when it receives an Ether frame having a broadcast MAC address, it transmits said Ether frame to all ports except a port which has received said Ether frame and stores a corresponding relationship between a MAC address from which said Ether frame has been transferred and said port which has received said Ether frame in said MAC to port table memory, and

wherein said controller also stores a counter value for specifying one of a plurality of said Ether ports in turn at transmission of an Ether frame to said Ether ports when said plurality of Ether ports correspond to a single MAC address to which said frame is to be transferred in a corresponding relationship between a MAC address to which said frame is to be transferred and Ether ports to which said frame is to be transferred stored in said MAC to

Atty. Dkt. No. 040373-0294

port table memory, and increments and updates said counter value each time an Ether frame is transferred to one of said plurality of Ether ports.

2. (Currently Amended) A high-speed/high-reliability Ether transmission system comprising a network including information processing devices and hubs connected through Ether cables, a local bus having a higher speed than that of said Ether cable, and an I/F apparatus, said network being connected through said I/F apparatus to said local bus,

wherein said I/F apparatus comprises a plurality of Ether ports connected to said Ether cables, a bus port connected to said local bus, a controller connected to said Ether ports and said bus port, and a MAC to port table, memory for storing a corresponding relationship between a MAC address, to which an Ether frame is to be transferred and said Ether ports or said bus port to which said frame is to be transferred, and

wherein said controller refers to said MAC to port table memory when it receives an Ether frame having a MAC address to which said frame is to be transferred, and if said MAC address to which said frame is to be transferred is stored in said MAC to port table memory, it transmits said Ether frame to a port to which said frame is to be transferred corresponding to said MAC address, or if said MAC address to which said frame is to be transferred is not stored, it transmits said Ether frame to all ports except a port which has received said Ether frame and stores a corresponding relationship between a MAC address from which said Ether frame has been transferred and said port which has received said Ether frame in said MAC to port table memory, and when it receives an Ether frame having a broadcast MAC address, it transmits said Ether frame to all ports except a port which has received said Ether frame and stores a corresponding relationship between a MAC address from which said Ether frame has been transferred and said port which has received said Ether frame in said MAC to port table memory; and

wherein said controller also stores a counter value for specifying one of a plurality of said Ether ports in turn at transmission of an Ether frame to said Ether ports when said plurality of Ether ports correspond to a single MAC address to which said frame is to be transferred in a corresponding relationship between a MAC address to which said frame is to

Atty. Dkt. No. 040373-0294

be transferred and Ether ports to which said frame is to be transferred stored in said MAC to port table memory, and increments and updates said counter value each time an Ether frame is transferred to one of said plurality of Ether ports.

3. (Currently Amended) A high-speed/high-reliability Ether transmission system comprising a plurality of Ether cables connected to plurality of information processing devices, respectively, a local bus connected to another information processing device and having a higher speed than that of said Ether cables, and an I/F apparatus, said Ether cables being connected through said I/F apparatus to said local bus,

wherein said I/F apparatus comprises & plurality of Ether ports connected to said Ether cables, a bus port connected to said local bus, a controller connected to said Ether ports and said bus port, and a MAC to port table memory for storing a corresponding relationship between a MAC address to which an Ether frame is to be transferred and said Ether ports or said bus port to which said frame is to be transferred, and

wherein said controller refers to said MAC to port table memory when it receives an Ether frame having a MAC address to which said frame is to be transferred, and if said MAC address to which said frame is to be transferred is stored in said MAC to port table memory, it transmits said Ether frame to a port to which said frame is to be transferred corresponding to said MAC address, or if said MAC address to which said frame is to be transferred is not stored, it transmits said Ether frame to all ports except a port which has received said Ether frame and- stores a corresponding relationship between a MAC address from which said Ether frame has been transferred and said port which has received said Ether frame in said MAC to port table memory, and when it receives an Ether frame having a broadcast MAC address, it transmits said Ether frame to all ports except a port which has received said Ether frame and stores a corresponding ~relationship between a MAC address from which said Ether frame has been transferred and said port which has received said Ether frame in said MAC to port table memory; and

wherein said controller also stores a counter value for specifying one of a plurality of said Ether ports in turn at transmission of an Ether frame to said Ether ports when said

Atty. Dkt. No. 040373-0294

plurality of Ether ports correspond to a single MAC address to which said frame is to be transferred in a corresponding relationship between a MAC address to which said frame is to be transferred and Ether ports to which said frame is to be transferred stored in said MAC to port table memory, and increments and updates said counter value each time an Ether frame is transferred to one of said plurality of Ether ports.

4.-6. (Cancelled)

7. (Original) The high-speed/high-reliability Ether transmission system according to claim 1, wherein an information processing device connected to said Ether cable transmits an ARP request frame having a broadcast MAC address at first transmission of an Ether frame.

8. (Original) The high-speed/high-reliability Ether transmission system according to claim 2, wherein an information processing device connected to said Ether cable transmits an ARP request frame having a broadcast MAC address at first transmission of an Ether frame.

9. (Original) The high-speed/high-reliability Ether transmission system according to claim 3, wherein an information processing device connected to said Ether cable transmits an ARP request frame having a broadcast MAC address at first transmission of an Ether frame.

10. (Currently Amended) The high-speed/high-reliability Ether transmission system according to ~~claim 4~~ claim 1, wherein an information processing device connected to said Ether cable transmits an ARP request frame having a broadcast MAC address at first transmission of an Ether frame.

11. (Original) The high-speed/high-reliability Ether transmission system according to claim 1, wherein said controller stores a corresponding relationship between a MAC address of said information processing device connected to said local bus and said bus port in said MAC to port table memory directly from said information processing device connected to

Atty. Dkt. No. 040373-0294

said bus port at switching on power of said information processing device instead of storage based on a received Ether frame.

12. (Original) The high-speed/high-reliability Ether transmission system according to claim 2, wherein said controller stores a corresponding relationship between a MAC address of said information processing device connected to said local bus and said bus port in said MAC to port table memory directly from said information processing device connected to said bus port at switching on power of said information processing device instead of storage based on a received Ether frame.

13. (Original) The high-speed/high-reliability Ether transmission system according to claim 3, wherein said controller stores a corresponding relationship between a MAC address of said information processing device connected to said local bus and said bus port in said MAC to port table memory directly from said information processing device connected to said bus port at switching on power of said information processing device instead of storage based on a received Ether frame.

14. - 15. (Cancelled)

16. (Original) The high-speed/high-reliability Ether transmission system according to claim 1, wherein contents stored in said MAC to port table except a corresponding relationship between a MAC address of said information processing device connected to said local bus and said bus port are initialized at predetermined intervals.

17. (Original) The high-speed/high-reliability Ether transmission system according to claim 2, wherein contents stored in said MAC to port table except a corresponding relationship between a MAC address of said information processing device connected to said local bus and said bus port are initialized at predetermined intervals.

18. (Original) The high-speed/high-reliability Ether transmission system according to claim 3, wherein contents stored in said MAC to port table except a corresponding relationship between a MAC address of said information processing device connected to said local bus and said bus port are initialized at predetermined intervals.

19. (Cancelled)

20. (Original) The high-speed/high-reliability Ether transmission system according to claim 11, wherein contents stored in said MAC to port table except a corresponding relationship between a MAC address of said information processing device connected to said local bus and said bus port are initialized at predetermined intervals.

21. (Currently Amended) An I/F apparatus for connecting a network including information processing devices connected through Ether cables to another information processing device through a local bus having a higher speed than that of said Ether cables, comprising:

a plurality of Ether ports connected to said Ether cables;

a bus port connected to said local bus;

a controller connected to said Ether ports and to said bus port; and

a MAC to port table memory for storing a corresponding relationship between a MAC address to which an Ether frame is to be transferred and said Ether ports or said bus port to which said frame is to be transferred,

wherein said controller refers to said MAC to port table memory when it receives an Ether frame having a MAC address to which said frame is to be transferred, and if said MAC address to which said frame is to be transferred is stored in said MAC to port table memory, it transmits said Ether frame to a port to which said frame is to be transferred corresponding to said MAC address, or if said MAC address to which said frame is to be transferred is not stored, it transmits said Ether frame to all ports except a port which has received said Ether frame and stores a corresponding relationship between a MAC address from which said Ether frame has been transferred and said port which has received said Ether frame in said MAC to port table memory, and when it receives an Ether frame having a broadcast MAC address, it transmits said Ether frame to all ports except a port which has received, said Ether frame and stores a corresponding relationship between a MAC address from which said Ether frame has

Atty. Dkt. No. 040373-0294

been transferred and said port which has received said Ether frame in said MAC to port table memory; and

wherein said controller also stores a counter value for specifying one of a plurality of said Ether ports in turn at transmission of an Ether frame to said Ether ports when said plurality of Ether ports correspond to a single MAC address to which said frame is to be transferred in a corresponding relationship between a MAC address to which said frame is to be transferred and Ether ports to which said frame is to be transferred stored in said MAC to port table memory, and increments and updates said counter value each time an Ether frame is transferred to one of said plurality of Ether ports.

22. (Cancelled)

23. (Original) The I/F apparatus according to claim 21, wherein an information processing device connected to said Ether cable transmits an ARP request frame having a broadcast MAC address at first transmission of an Ether frame.

24. (Cancelled)

25. (Original) The I/F apparatus according to claim 21, wherein said controller stores a corresponding relationship between a MAC address of said information processing device connected to said local bus and said bus port in said MAC to port table memory directly from said information processing device connected to said local bus at switching on power of said information processing device instead of storage based on a received Ether frame.

26. (Cancelled)

27. (Original) The I/F apparatus according to claim 23, wherein said controller stores a corresponding relationship between a MAC address of said information processing device connected to said local bus and said bus port in said MAC to port table memory directly from said information processing device connected to said local bus at switching on power of said information processing device instead of storage based on a received Ether frame.

28. (Cancelled)



Atty. Dkt. No. 040373-0294

29. (Original) The I/F apparatus according to claim 21, wherein contents stored in said MAC to port table memory except a corresponding relationship between a MAC address of said information processing device connected to said local bus and said bus port are initialized at predetermined intervals.

30. (Cancelled)

31. (Original) The I/F apparatus according to claim 23, wherein contents stored in said MAC to port table memory except a corresponding relationship between a MAC address of said information processing device connected to said local bus and said bus port are initialized at predetermined intervals.

32. (Original) The I/F apparatus according to claim 25, wherein contents stored in said MAC to port table memory except a corresponding relationship between a MAC address of said information processing device connected to said local bus and said bus port are initialized at predetermined intervals.

33. (New) A high-speed/high-reliability Ether transmission system comprising:

a plurality of Ether cables,

a local bus connected to an information processing device and having a higher speed than that of said Ether cables,

and an I/F apparatus, said Ether cables being connected through said I/F apparatus to said local bus,

wherein said I/F apparatus comprises:

a plurality of Ether ports connected to said Ether cables, a bus port connected to said local bus,

a controller connected to said Ether ports and said bus port,

Atty. Dkt. No. 040373-0294

and a MAC to port table memory for storing a corresponding relationship between a MAC address to which an Ether frame is to be transferred and said Ether ports or said bus port to which said frame is to be transferred,

wherein said controller refers to said MAC to port table memory when it receives an Ether frame having a MAC address to which said frame is to be transferred, and if said MAC address to which said frame is to be transferred is stored in said MAC to port table memory, it transmits said Ether frame to a port to which said frame is to be transferred corresponding to said MAC address, or if said MAC address to which said frame is to be transferred is, not stored, it transmits said Ether frame to ports except a port which has received said Ether frame and stores a corresponding relationship between a MAC address from which said Ether frame has been transferred and said port which has received said Ether frame in said MAC to port table memory, and

wherein said controller also stores a counter value for specifying one of a plurality of said Ether ports in turn at transmission of an Ether frame to said Ether ports when said plurality of Ether ports correspond to a single MAC address to which said frame is to be transferred in a corresponding relationship between a MAC address to which said frame is to be transferred and Ether ports to which said frame is to be transferred stored in said MAC to port table memory, and increments and updates said counter value each time an Ether frame is transferred to one of said plurality of Ether ports.

34. (New) A high-speed/high-reliability Ether transmission system comprising a network including information processing devices and hubs connected through Ether cables, a local bus having a higher speed than that of said Ether cable, and an I/F apparatus, said network being connected through said I/F apparatus to said local bus,

wherein said I/F apparatus comprises a plurality of Ether ports connected to said Ether cables, a bus port connected to said local bus, a controller connected to said Ether ports and said bus port, and a MAC to port table, memory for storing a corresponding relationship between a MAC address, to which an Ether frame is to be transferred and said Ether ports or said bus port to which said frame is to be transferred,

Atty. Dkt. No. 040373-0294

wherein said controller refers to said MAC to port table memory when it receives an Ether frame having a MAC address to which said frame is to be transferred, and if said MAC address to which said frame is to be transferred is stored in said MAC to port table memory, it transmits said Ether frame to a port to which said frame is to be transferred corresponding to said MAC address, or if said MAC address to which said frame is to be transferred is not stored, it transmits said Ether frame to all ports except a port which has received said Ether frame and stores a corresponding relationship between a MAC address from which said Ether frame has been transferred and said port which has received said Ether frame in said MAC to port table memory, and

wherein said controller also stores a counter value for specifying one of a plurality of said Ether ports in turn at transmission of an Ether frame to said Ether ports when said plurality of Ether ports correspond to a single MAC address to which said frame is to be transferred in a corresponding relationship between a MAC address to which said frame is to be transferred and Ether ports to which said frame is to be transferred stored in said MAC to port table memory, and increments and updates said counter value each time an Ether frame is transferred to one of said plurality of Ether ports.

35. (New) A high-speed/high-reliability Ether transmission system comprising a plurality of Ether cables connected to plurality of information processing devices, respectively, a local bus connected to another information processing device and having a higher speed than that of said Ether cables, and an I/F apparatus, said Ether cables being connected through said I/F apparatus to said local bus,

wherein said I/F apparatus comprises & plurality of Ether ports connected to said Ether cables, a bus port connected to said local bus, a controller connected to said Ether ports and said bus port, and a MAC to port table memory for storing a corresponding relationship between a MAC address to which an Ether frame is to be transferred and said Ether ports or said bus port to which said frame is to be transferred,

wherein said controller refers to said MAC to port table memory when it receives an Ether frame having a MAC address to which said frame is to be transferred, and if said MAC

Atty. Dkt. No. 040373-0294

address to which said frame is to be transferred is stored in said MAC to port table memory, it transmits said Ether frame to a port to which said frame is to be transferred corresponding to said MAC address, or if said MAC address to which said frame is to be transferred is not stored, it transmits said Ether frame to all ports except a port which has received said Ether frame and- stores a corresponding relationship between a MAC address from which said Ether frame has been transferred and said port which has received said Ether frame in said MAC to port table memory, and

wherein said controller also stores a counter value for specifying one of a plurality of said Ether ports in turn at transmission of an Ether frame to said Ether ports when said plurality of Ether ports correspond to a single MAC address to which said frame is to be transferred in a corresponding relationship between a MAC address to which said frame is to be transferred and Ether ports to which said frame is to be transferred stored in said MAC to port table memory, and increments and updates said counter value each time an Ether frame is transferred to one of said plurality of Ether ports.

36. (New) The high-speed/high-reliability Ether transmission system according to claim 33, wherein an information processing device connected to said Ether cable transmits an ARP request frame having a broadcast MAC address at first transmission of an Ether frame.

37. (New) The high-speed/high-reliability Ether transmission system according to claim 34, wherein an information processing device connected to said Ether cable transmits an ARP request frame having a broadcast MAC address at first transmission of an Ether frame.

38. (New) The high-speed/high-reliability Ether transmission system according to claim 35, wherein an information processing device connected to said Ether cable transmits an ARP request frame having a broadcast MAC address at first transmission of an Ether frame.

39. (New) The high-speed/high-reliability Ether transmission system according to claim 33, wherein an information processing device connected to said Ether cable transmits

an ARP request frame having a broadcast MAC address at first transmission of an Ether frame.

40. (New) The high-speed/high-reliability Ether transmission system according to claim 34, wherein an information processing device connected to said Ether cable transmits an ARP request frame having a broadcast MAC address at first transmission of an Ether frame.

41. (New) The high-speed/high-reliability Ether transmission system according to claim 35, wherein an information processing device connected to said Ether cable transmits an ARP request frame having a broadcast MAC address at first transmission of an Ether frame.

42. (New) An I/F apparatus for connecting a network including information processing devices connected through Ether cables to another information processing device through a local bus having a higher speed than that of said Ether cables, comprising:

a plurality of Ether ports connected to said Ether cables;

a bus port connected to said local bus;

a controller connected to said Ether ports and to said bus port; and

a MAC to port table memory for storing a corresponding relationship between a MAC address to which an Ether frame is to be transferred and said Ether ports or said bus port to which said frame is to be transferred,

wherein said controller refers to said MAC to port table memory when it receives an Ether frame having a MAC address to which said frame is to be transferred, and if said MAC address to which said frame is to be transferred is stored in said MAC to port table memory, it transmits said Ether frame to a port to which said frame is to be transferred corresponding to said MAC address, or if said MAC address to which said frame is to be transferred is not stored, it transmits said Ether frame to all ports except a port which has received said Ether frame and stores a corresponding relationship between a MAC address from which said Ether

Att. Dkt. No. 040373-0294

frame has been transferred and said port which has received said Ether frame in said MAC to port table memory, and

wherein said controller also stores a counter value for specifying one of a plurality of said Ether ports in turn at transmission of an Ether frame to said Ether ports when said plurality of Ether ports correspond to a single MAC address to which said frame is to be transferred in a corresponding relationship between a MAC address to which said frame is to be transferred and Ether ports to which said frame is to be transferred stored in said MAC to port table memory, and increments and updates said counter value each time an Ether frame is transferred to one of said plurality of Ether ports.